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# Original Project Proposal

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## **Directed Study Proposal**

Caitlin Hobbs

In this study, a research team led by Dr. Harold Mayer and Ph.D. student, Tim Blair, will address the dichotomy that currently exists between health and fitness, especially involving obese subjects. Using research from the Full Plate Diet study as a platform, the team will further collect and analyze data in the Human Performance Lab on the campus of Southern Adventist University. This experimental design will consist of several parts and will address many aspects involved in overall health, such as blood pressure, central fat, and metabolism. The relationship between these aspects will be compared with the level of fitness achieved. If, while becoming more fit, a subject loses efficiency in these areas, the goals of fitness may be bypassing the goals of overall health.

Metabolic health is one aspect to be studied, with a healthy metabolism burning fat efficiently. Metabolism is crucial to overall health due to many diseases being metabolic. The human body is at rest most of the time, so it must be able to burn fat efficiently at rest. Based on a previous case study done under Dr. Mayer, fitness level may improve simultaneously with a decrease in metabolic efficiency. The subject's metabolism shifted from very efficient to very inefficient during the course of the study. The direct cause of such a shift is unknown. Further research during this study may determine or eliminate causes of this shift. Prevention of this metabolic shift would be crucial to improving metabolic health, and this study will look at metabolism as one of the aspects of overall health as related to fitness.

Specifically, this semester will consist of the groundwork necessary for this study. The team will recruit funding, gather appropriate subjects, elect specific topics to focus on, and design the specific format to be used for each aspect studied. Each member will be involved in this process and will have an emphasis for which a literature review will be prepared as a basis for the implementation of this study. These tasks will center on the goal of the study: to further define a balanced lifestyle, maximizing both health and fitness without sacrificing the benefits of either.

## **Senior Project Proposal**

### *The Dichotomy between Health and Fitness*

Caitlin Hobbs

In this study, a research team led by Dr. Harold Mayer and Ph.D. student, Tim Blair, will collaborate to address the dichotomy that currently exists between health and fitness, especially involving obese subjects. Using research from the Full Plate Diet study as a platform, the team will further collect and analyze data in the Human Performance Lab on the campus of Southern Adventist University. This experimental design will consist of several parts and will address many aspects involved in overall health, such as blood pressure, central fat, and metabolism. The relationship between these aspects will be compared with the level of fitness achieved. If, while becoming more fit, a subject loses efficiency in other areas, the goals of fitness may be tragically bypassing important aspects of health.

Metabolic health is one aspect to be studied, with a healthy metabolism burning fat efficiently. Metabolism is crucial to overall health due to many diseases being metabolic. The human body is at rest most of the time, so it must be able to burn fat efficiently at rest. Based on a previous case study done under Dr. Mayer, fitness level may improve simultaneously with a decrease in metabolic efficiency. The subject's metabolism shifted from very efficient to very inefficient during the course of the study. The direct cause of such a shift is unknown. Further research during this study may determine or eliminate causes of this shift. Prevention of this metabolic shift would be crucial to improving metabolic health, and this study will look at metabolism as one of the aspects of overall health as related to fitness.

Specifically, this semester will consist of the groundwork necessary for this study. The team will recruit funding, gather appropriate subjects, elect specific topics to focus on, and design the specific format to be used for each aspect studied. A subject base of around 30 is expected and the Human Performance Lab provides most testing equipment needed. The team will also be exploring collaboration with Florida Hospital's Creation Health program during this semester. Each team member will be involved in this process and will have an emphasis for which a literature review will be prepared as a basis for the implementation of this study. These tasks will center on the goal of the study: to further define a balanced lifestyle, maximizing both health and fitness without sacrificing the benefits of either.

As a Southern Scholar, my goal is to take an active role in this research team during the Fall semester as we prepare for implementation. We will be meeting once a week and I will be receiving credit for a Directed Study. I will also be “assigned” a specific part of the study to research independently and, when we implement the study on subjects during the winter semester, I will help gather and analyze the data regarding that topic (most likely metabolic efficiency) and will be able to relate it to our overall topic—the dichotomy between health and fitness. Dr. Mayer is confident that I will have information and hands on research to present at the end of the winter semester for the Honors Symposium, before graduation.